

INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL2004/000522

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G03F7/004 G03F7/039

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G03F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/031953 A1 (J. HATAKEYAMA ET AL.) 13 February 2003 (2003-02-13) page 22	1-9
X	US 2003/008231 A1 (Y. HARADA ET AL.) 9 January 2003 (2003-01-09) page 20 - page 21	1-9
X	US 6 461 790 B1 (J. HATAKEYAMA ET AL.) 8 October 2002 (2002-10-08) column 28 - column 30; table 3	1-9
X	US 2001/038969 A1 (J. HATAKEYAMA) 8 November 2001 (2001-11-08) page 23 - page 24; table 5	1-9

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"G" document member of the same patent family

Date of the actual completion of the international search

17 November 2004

Date of mailing of the international search report

04 03 2005

Name and mailing address of the ISA

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

a composition suitable for use at 10-165 nm comprising (a) a polymeric binder, (b) a photoactive compound, (c) a dissolution inhibitor, the dissolution inhibitor comprising at least (i) two aromatic groups, (ii) fluorine, and (iii) a blocked acid group which when unblocked has a $pK_a < 12$.

2. claims: 10-14

a compound represented by formula 1

3. claim: 15

a process for forming an etched layer in a chip comprising, in order: (A) forming a photoresist layer on a substrate wherein the photoresist layer is prepared from a composition comprising (a) a polymeric binder, (b) a photoactive compound, and (c) a dissolution inhibitor, the dissolution inhibitor comprising at least (i) two aromatic groups, (ii) fluorine, and (iii) a blocked acid group which when unblocked has a $pK_a < 12$; (B) imagewise exposing a photoresist layer to form imaged and non-imaged areas; (C) developing the exposed photoresist layer having imaged and non-imaged areas to form a relief image on the substrate; (D) etching the substrate to a predetermined depth; (E) removing the relief image from the substrate

4. claim: 16

a process for the production of a chip by using immersion lithography, comprising the step of forming a photoresist layer on a substrate, wherein the photoresist layer is prepared from a photoresist composition comprising: (a) a binder; (b) a photoactive component, and (c) a fluor containing compound

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003031953 A1	13-02-2003	JP 2003082030 A TW 584786 B	19-03-2003 21-04-2004
US 2003008231 A1	09-01-2003	JP 2002327013 A	15-11-2002
US 6461790 B1	08-10-2002	JP 2001146505 A TW 527363 B	29-05-2001 11-04-2003
US 2001038969 A1	08-11-2001	JP 2001302735 A	31-10-2001